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<b>(21) International Application Number:</b> PCT/US97/08271  <b>(22) International Filing Date:</b> 15 May 1997 (15.05.97)  <b>(30) Priority Data:</b> 60/005,189 17 May 1996 (17.05.96) US PCT/US96/08107 24 May 1996 (24.05.96) WO <b>(34) Countries for which the regional or international application was filed:</b> US et al. 60/020,869 27 June 1996 (27.06.96) US 60/024,405 22 August 1996 (22.08.96) US 60/024,555 26 August 1996 (26.08.96) US 60/030,697 13 November 1996 (13.11.96) US 60/032,666 13 December 1996 (13.12.96) US 60/034,053 31 December 1996 (31.12.96) US 08/784,862 15 January 1997 (15.01.97) US 08/788,740 24 January 1997 (24.01.97) US 08/802,054 18 February 1997 (18.02.97) US 08/819,464 17 March 1997 (17.03.97) US P-92,304 6 May 1997 (06.05.97) US  <b>(71) Applicant:</b> FORMFACTOR, INC. [US/US]; 5666 La Ribera Street, Livermore, CA 94550 (US).		<b>(72) Inventors:</b> KHANDROS, Igor, Y.; 25 Haciendas Road, Orinda, CA 94563 (US). ELDRIDGE, Benjamin, N.; 651 Sheri Lane, Danville, CA 94526 (US). MATHIEU, Gactan, L.; 659 Orange Way, Livermore, CA 94550 (US). GRUBE, Gary, W.; 6807 Singletree Court, Pleasanton, CA 94588 (US).  <b>(74) Agent:</b> LINDEN, Gerald, E.; Suite 300, 2716 South Chickasaw Trail, Orlando, FL 32829 (US).  <b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
<b>(54) Title:</b> MICROELECTRONIC CONTACT STRUCTURE AND METHOD OF MAKING SAME		
<b>(57) Abstract</b>  <p>Spring contact elements are fabricated by depositing at least one layer of metallic material into openings defined on a sacrificial substrate. The openings may be within the surface of the substrate, or in one or more layers deposited on the surface of the sacrificial substrate. Each spring contact element has a base end portion, a contact end portion, and a central body portion. The contact end portion is offset in the z-axis (at a different height) than the central body portion. The base end portion is preferably offset in an opposite direction along the z-axis from the central body portion. In this manner, a plurality of spring contact elements are fabricated in a prescribed spatial relationship with one another on the sacrificial substrate. The spring contact elements are suitably mounted by their base end portions to corresponding terminals on an electronic component, such as a space transformer or a semiconductor device, whereupon the sacrificial substrate is removed so that the contact ends of the spring contact elements extend above the surface of the electronic component. In an exemplary use, the spring contact elements are thereby disposed on a space transformer component of a probe card assembly so that their contact ends effect pressure connections to corresponding terminals on another electronic component, for the purpose of probing the electronic component.</p>		

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